MEDFUSION 3500

SYRINGE INFUSION PUMP

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Configuration Manual

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1. INTRODUCTION

This manual is designed to teach you the customizing process for the *Medfusion 3500* infusion pump. Through customization, you make the pump meet the specific needs and purposes of your unit, organization, department, or hospital.

You must be thoroughly familiar with the contents of the Operation Manual as well as this manual, *before* customizing the features and options of the *Medfusion 3500* pump.

This manual presumes you have studied the Operation Manual, and you must be fully competent with using the pump.

Usability	This manual and its contents are valid for use with all software versions starting with 3.0.x for example, 3.0.0, 3.0.1, etc.

1.1. Finding Relevant Information

Refer to the *Medfusion 3500* Infusion Pump Operation Manual for the following important information:

- Important Operation Notices
- Correct Use of This Pump
- Intended Use
- Features & Controls
- Technical Specifications & Definitions
- Syringe Models & Standard
- Operation Warnings & Cautions
- Guidelines For Enhanced Pump Performance

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2. CUSTOM CONFIGURING FEATURES & OPTIONS

This chapter contains definitions and a requirements overview for customizing the operations of the *Medfusion 3500* infusion pump. This includes custom selection, enabling or disabling, and setting pump features.

The actual configuration any *Medfusion 3500* infusion pump has depends entirely on whatever its *current settings* may be. If you don't know what the current settings are, you should review them before changing them. You should also learn who last setup the pump, and whether you are authorized to change their settings for a particular pump.

The only people who should be authorized to setup & monitor any infusion are nurses, physicians, or other health-care professionals with training to practice infusion therapy and operate the *Medfusion 3500* syringe pump.

2.1. Custom Configuration Overview

What follows is a basic overview of the configuration utility, what it is intended for, and how to use it.

There are two (2) methods available for custom configuration of the Medfusion 3500 syringe pump. The first method is to access the custom configuration mode within the pump and make all appropriate setting changes. The second is to utilize the *External Setup Program* (ESP) in a PC and, once properly connected to the Medfusion 3500, download the settings. Some options such as upper and lower dose limits (PharmGuard), and naming libraries can ONLY be accessed through ESP.

Multiple Changes Are Possible	While the following steps describe making a single configuration change, it is not necessary to exit customization before making additional changes. Once you have started using the configuration utility you can make as many changes as you wish before you exit.

Accessing the Custom Configuration mode within the pump;

1. The pump must be ON and ready for use.
2. At the SELECT THE MODE screen, find and select the CUSTOM PROGRAM feature. (Depending on the current setup for your pump, you usually have to press the **More** button and search for it on alternative screens.
3. Type the configuration password: **3000**. Then press the **Enter** button.
4. Find the option or feature you wish to customize, enable, or disable. Make your changes. Usually, you must press the **Stop** button to save changes and exit. In other cases, your changes are saved when you exit a feature or option.
5. You can always revise any changes you have made before exiting the configuration utility.
6. Once you exit custom configuration, whatever changes you just made to pump configuration are now "permanent" until the next time you enter the custom configuration and change them. (Here, "permanent" means at least 10 years.)

2.2. Utilizing the External Settings Program (ESP) to Configure the Medfusion 3500

1. The pump must be ON and ready for use.
2. Connect the PC and pump via the IR-RS232 adapter
3. ESP program must be installed and running on the PC
4. Follow prompts in ESP to select and confirm program options
5. Review complete program and download to the pump
6. Save and print selected program options (save to electronic file for future reference)

2.3. Factory Default Configuration

The Medfusion 3500 infusion pump comes with the General Defaults as its active settings. These defaults create a basic group of features, including syringes, delivery modes, program options, libraries and their templates, occlusion settings, flow rates, and alarms. Such standard features provide a foundation for customizing the pump to meet your needs.

2.3.1. Three Major Sets of Defaults

The *Medfusion 3500* infusion pump software has three sets of factory default configurations, they are:

- Anesthesia
- General
- NICU

These can be used to restore configuration to factory settings after a pump has been customized. Their settings can also be used as "foundation" for customizing a pump to meet the specific needs of a unit, department, organization, or hospital.

These major groups of presets can be used to undo all customizations that have been made to a pump, and restore it to a more standard usage.

For information on restoring and/or using Default Configurations, see the chapter titled "Restore & Use Default Configuration".

2.4. Enabling, Disabling, and Moving

The most common capability of custom configuration is allowing you to simply *enable* or *disable* individual features and options. You can also move an enabled feature to reorder its appearance onscreen.

- When a feature or option is *enabled*, you can use it. All its settings or options are available to select from on applicable screen.
- When a feature or option is *disabled*, you cannot use it. None of its settings or options are available to select from on any screen.
- The same holds true for enabling and disabling syringes for use with the pump. The parameters for correctly using the syringes become available or unavailable.

In other words, you are simply toggling a feature ON or OFF. The feature you toggle becomes available or unavailable until the next time you decide to change its status.

More Information on Enabling / Disabling	For more information on this feature, see the chapters titled: "Enabling / Disabling / Moving Syringes" "Enabling / Disabling / Moving Delivery Modes" "Enabling / Disabling / Moving Program Options"

2.5. Table Of Custom Configuration Options

The following is a table of features and options available for customization to meet the specific needs of your unit, department, organization, or hospital:

Feature or Option	What It Controls
Select Syringes	The *Medfusion 3500* infusion pump is engineered to work precisely within the physical parameters of specific syringe models from specific manufacturers. Thus it comes with a database of syringe models that are available for use with the pump.
Select Delivery Modes	This pump comes with numerous standard delivery modes enabled. Plus, there are also several other delivery modes you can setup. All these delivery modes can be either enabled or disabled for use with your infusion pump.
Select Program Options	This pump also has various options you can use to modify any delivery or infusion settings. They are: • Standby • Loading Dose • Bolus Dose • Volume Limit • KVO • Save to Library • Toggle Rapid Occlusion Detection • Toggle PVD / PDD • Override Occl Limit • Override Alarm Volume • Toggle Empty Tone • Toggle Near Empty Tone • Delayed Start
Auto Prompts	The *auto prompts* automatically prompt the user to enter or verify the enabled Program Options every time an infusion is programmed. The Program Options that may be setup to be auto-prompted include: • Standby • Bolus Dose • Volume Limit

	• KVO
Feature or Option	**What It Controls**
E-Plates/Library D	You have the option to enable/disable E-Plates. If E-plates are enabled, then Library D will not be available. If E-plates are disabled, then Library D is available.
Pump ID Label	Allows giving each *Medfusion 3500* infusion pump its own identification name and/or number. This can be useful for identifying not only the pump, but also the type of configuration setup used by the pump.
Occlusion Limit	Allows selecting and setting from 4 different levels of *occlusion limits* programmed into the infusion pumps. They are: ***Very Low; Low; Normal; High***.
Maximum Flow Rate	Allows limiting maximum flow rate settings for normal delivery of medication or fluids.
Maximum Bolus Rate	Allows setting the maximum *bolus* delivery rate used as a standard for pump operations.
Program Dose or Program Volume Display	You have the option of displaying onscreen during any infusion the *program volume delivered* or *program dosage delivered*. If there is no concentration set, then the display is the *program volume delivered*.
Alarm Setup	The *alarms* are the warnings or cautions the pump sounds to let you know something is happening or about to happen. There are four major options for alarm setup: • Alarm Style – Choose International or Medex defined alarms. • Alarm Silence Time – Set the interval pump remains silent after you press the 🔕 button. • Near Empty Alarm Time – Set the time "before the syringe is empty" when pump sounds an alarm. (This alarm may be disabled.) • Alarm Loudness – Choose alarm volumes levels from very soft to very loud.
Keyclick (beep) Loudness	The *keyclick* is the beeping sound the buttons make when you press them. You can set this range from off to very loud.
Clear Library Entry (Template)	This is a housekeeping utility that allows erasing or deleting the contents of a single template in an E-Plates or Standard library.
Clear All Libraries	This is a housekeeping utility that allows erasing or deleting the contents of ALL templates in ALL E-Plate and Standard libraries.
Default Configurations Restore & Use	This pump comes with three major sets of configuration defaults intended to provide a baseline for meeting the needs of your unit, department, organization, or hospital. They are: 1. Anesthesia Defaults. 2. General Defaults. 3. NICU Defaults. The term "default" is here defined as values or groups of values that are arbitrarily used as standard settings. But with this pump, "standard settings" are whatever values are defined as standard by your unit, department, organization, or hospital. You may opt to restore these defaults at any time through custom configuration. Tables of settings for all three groups are in the chapter titled "Restore / Use Default Configuration".
Set Unlock Pass Code	Allows activation of a numeric pass code of the user's choice from 1 to 9999. Once activated the pass code must be entered to unlock a locked user interface. This feature helps to increase the security of the infusion parameters.
Rapid Occlusion Detection (FlowSentry)	Allows activation of a feature that will detect an occlusion to flow much more quickly then is possible by the conventional force sensor method. FlowSentry may be enabled or disabled
1 ML Syringe Support	Allows 1ml syringes to be enabled/disabled.
Teach Mode	The *teach mode* is the option which allows one pump to transmit its custom configuration to another pump.
Learn Mode	The *learn mode* is the option which allows one pump to receive custom configuration transmitted from another pump. The pump may learn: configuration only; libraries only; or all.

2.6. Table of Library Features

The following is a table of features for E-Plates and Standard libraries. These can be enabled, disabled, and customized to meet the needs of your unit, department, organization, or hospital.

Feature or Option	What It Controls
E-Plates Library Templates	The E-Plates Library contains 16 blank or used "templates" of for storing settings. Such presets include syringe size, rate of dosage, size of dosage, patient's weight, and so on. Each template can be given an easily recognized name. After you select a template for use, its name appears on the delivery screen. So you can verify correct settings by verifying the name. "E-Plates" is an abbreviation for "Electronic Templates". When you use an E-Plate, all its presets load *at once*, without step-by-step verification, and the pump pauses at the BEGIN INFUSION screen. All you have to do is fill in any blank fields, check setting correctness on the screen, and then press the **Start** button to begin infusion. If the E-Plates feature is not desired, a toggle can be used to disable E-Plates and enable "standard" Library D in it's place
Standard Libraries Templates	The pump has 3 "standard" libraries (4 if Library D is enabled) containing 16 blank or used "templates" per library. These are *user-programmable* "sets" of standard values used for administering standard fluids or medications without having to setup individual dosage each time. Each template can be given an easily recognized name, with as many as 15 characters. After you select a template for use, its name appears on the delivery screen. You can then verify the correct template has been selected by verifying the name. **Always confirm that all settings are correct prior to beginning the infusion.** Such standard dosages shall always be setup according to the standards & practices of your hospital, unit, or organization.
Create & Save Library Entries to the pump (Templates)	It is very easy to save a new template to any of the 4 libraries. This should be a carefully controlled aspect of configuration, as it takes place outside the CUSTOM PROGRAM utility, or within the ESP on a PC. If you are creating a library entry using the Save To Library feature from the Options menu; 1. You must *enable* the SAVE TO LIBRARY feature before you can create a template. 2. Then you have to exit custom programming and use the SELECT THE Mode feature to setup the infusion you wish to save as a template. 3. Then use the SAVE TO LIBRARY option to store it as a template in your choice of the 4 libraries. 4. Repeat steps 2 & 3 for each template you create. 5. When finished creating templates, use the CUSTOM PROGRAM utility to *disable* the SAVE TO LIBRARY feature. Otherwise, *any user* can make changes to the templates. Once stored in a library, these templates can be reused any time you need to start a standard infusion delivery. If you are creating a library entry with the ESP program on a PC; 1. Both the pump and PC must be ON and connected via the Serial Port cable. 2. Follow the prompts in the ESP for library entries 3. Save and check all entries 4. Download library entries to the pump

2.7. Table of Configuration Cloning Features

Configuration cloning is the ability to create custom configuration settings in one pump, and then transfer them to another pump. Below is a table of Configuration Cloning features and their definitions.

Feature or Option	What It Controls
Learn Everything	With this cloning feature, the pump receives ALL custom configuration settings, including Standard and E-Plates Libraries. This takes approximately 1 minute.
Learn Config Only	With this cloning feature, the pump receives ONLY the custom configuration settings. This takes approximately 2 seconds.
Learn Libraries Only	With this cloning feature, the pump receives only the library settings. This takes approximately 1 minute.

3. PASSWORD PROTECTION

Access to custom configuration is controlled by a security code. It is recommended you do not give this password to all users. Only persons authorized to reconfigure the pump's operations should hold this password.

☞ **The custom configuration security code is**: **3000**

Never tell this security setup control code to unauthorized personnel in your unit, department, organization, or hospital.

It is recommended your unit, department, organization or hospital establish a regulated protocol for determining who is responsible for configuring and reconfiguring the Medfusion 3500 infusion pump.

Only properly trained personnel should ever be authorized to setup this pump for use with patients.

Warning! Unauthorized Configuration	Unauthorized changes to pump configuration may cause confusion among users, which can create a hazard for use.

3.1. Using the Custom Configuration Security Code

Below are the steps for accessing the custom programming or configuration mode of the *Medfusion 3500* infusion pump:

1. The pump must be turned ON and ready for use.
2. At the SELECT THE MODE screen, press the **More** button until you find the CUSTOM PROGRAM option onscreen.
3. Select CUSTOM PROGRAM by pressing its **number** button on the keypad.
4. Now type the security code **3000**. Then press the **Enter** button.
5. The MODIFY SETTINGS screen should now appear. Make your custom configurations. Follow any onscreen prompts and directions. Your changes are either saved by pressing the **Stop** button, or when you exit CUSTOM PROGRAM.

4. RESTORE & USE DEFAULT CONFIGURATION SETTINGS

This pump has 3 sets of default factory configuration files intended to meet the *standard* needs of most organizations or hospitals. You may select, restore, and use any of these default settings at any time through customer configuration. They are:

1. Anesthesia Defaults.
2. General Defaults.
3. NICU Defaults.

These default settings are a permanent part of the software used to run the Medfusion 3500 infusion pump. The default settings are simply a resource you can use to restore factory settings. Your customizations are saved to the configuration file that tells the pump how to use the features and options you have configured.

General Defaults	The *Medfusion 3500* infusion pump is shipped with the GENERAL DEFAULTS configuration settings selected.

4.1. Why Use Default Configuration Settings?

If you are reconfiguring a *Medfusion 3500* infusion pump that has been customized repeatedly, you may find the default configurations provide a common starting point for new customization.

So you may find it convenient to simply restore one of the above three default configuration settings. Then just begin making your customization from there. You will have removed all customizations made by other units or departments.

4.2. Restoring Default Settings

Below are the steps for restoring the default settings for the Medfusion 3500 infusion pump:

1. With the pump turned ON, select CUSTOM PROGRAM from the list of features.
2. Type the password and press the **Enter** button.
3. The MODIFY SETTINGS screen should now appear.
4. Find and select the RESTORE DEFAULT CONFIGURATION feature. Press the **More** button until you locate it.
5. The SELECT DEFAULT CONFIGURATION screen appears. The previously selected set of defaults has the *highlight* covering it. Select the default configuration you wish to reinstate. Your choices are:
   - Anesthesia Defaults
   - General Defaults
   - NICU Defaults
6. Pressing the number button for the selection puts the highlight on the set of defaults you intend to use.
7. When ready, press the Enter button.
8. The selected default settings have replaced all changes made to the pump configuration. See the following tables to review those default sets.

4.3. Tables of Default Settings for Anesthesia, General, and NICU

This section contains a series of tables containing default setting information for Anesthesia, General, and NICU.

4.3.1. By Syringe Model

SYRINGE MODEL	ANESTHESIA	GENERAL	NICU
B. Braun Omnifix	Disabled	Disabled	Disabled
B. Braun Perfusor	Disabled	Disabled	Disabled
B-D Glass	Disabled	Disabled	Disabled
B-D	Enabled	Enabled	Enabled
Monoject	Enabled	Enabled	Enabled
Terumo	Enabled	Enabled	Enabled
AstraZeneca	Disabled	Disabled	Disabled

4.3.2. By Delivery Modes

DEFAULT DELIVERY MODES	ANESTHESIA (w/Order)	GENERAL (w/Order)	NICU (w/Order)
Micrograms \ kg \ Minute	Enabled, 1st	Enabled, 3rd	Disabled
Micrograms \ kg \ Hour	Enabled, 2nd	Disabled	Disabled
Milligrams \ kg \ Minute	Enabled, 3rd	Disabled	Disabled
Milligrams \ kg \ Hour	Enabled, 4th	Disabled	Disabled
Milliliter \ Hour	Enabled, 5th	Enabled, 1st	Enabled, 1st
Recall Last Settings	Enabled, 6th	Enabled, 4th	Enabled, 3rd
Page Break	Enabled, 7th	Enabled, 5th	Enabled, 4th
Volume / Time	Disabled	Enabled, 2nd	Enabled, 2nd
Micrograms \ Hour	Disabled	Disabled	Disabled
Micrograms \ Minute	Disabled	Disabled	Disabled
Milligrams \ Hour	Disabled	Disabled	Disabled
Milligrams \ Hour	Disabled	Disabled	Disabled
Millunits \ Hour	Disabled	Disabled	Disabled
Millunits \ Minute	Disabled	Disabled	Disabled
Units \ Hour	Disabled	Disabled	Disabled
Units \ Minute	Disabled	Disabled	Disabled
Units\Kg\Hour	Disabled	Disabled	Disabled
Library A	Disabled	Disabled	Disabled
Library B	Disabled	Disabled	Disabled
Library C	Disabled	Disabled	Disabled
Custom Dilution	Disabled	Disabled	Disabled
Intermittent Volume / Time	Disabled	Disabled	Disabled
Custom Program	Enabled, 8th	Enabled, 6th	Enabled, 6th
Biomed	Enabled, 9th	Enabled, 7th	Enabled, 7th

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4.3.3. By Program Options

PROGRAM OPTIONS	ANESTHESIA	GENERAL	NICU
Standby	Enabled	Enabled	Enabled
Loading Dose	Enabled	Disabled	Disabled
Bolus Dose	Enabled	Disabled	Disabled
Volume Limit	Enabled	Enabled	Enabled
KVO	Disabled	Disabled	Disabled
Toggle PVD / PDD	Disabled	Disabled	Disabled
Save to Library	Enabled	Enabled	Enabled
Toggle Rapid Occlusion Detection	Enabled	Enabled	Enabled
Override Occlusion Limit	Enabled	Enabled	Enabled
Override Alarm Volume	Disabled	Disabled	Disabled
Toggle Empty Tone	Disabled	Disabled	Disabled
Toggle Near Empty Tone	Disabled	Disabled	Disabled
Delayed Start	Disabled	Disabled	Disabled

4.3.4. By Auto Prompt Options

AUTO PROMPT OPTIONS	ANESTHESIA	GENERAL	NICU
Standby	Disabled	Disabled	Disabled
Bolus Dose	Disabled	Disabled	Disabled
Volume Limit	Disabled	Disabled	Disabled
KVO	Disabled	Disabled	Disabled

4.3.5. By Other Default Options

OTHER DEFAULT OPTIONS	ANESTHESIA	GENERAL	NICU
E-Plates Feature	Enabled	Disabled	Disabled
Pump ID Label	*Blank*	*Blank*	*Blank*
Occlusion Limit	*Normal*	*Normal*	*Normal*
Maximum Delivery Rate	1130 ml / hr	300 ml / hr	300 ml / hr
Maximum Bolus Rate	Maximum	10X	5X
Program Dose Display	Enabled	Disabled	Disabled
Alarm Type	*Medex*	*Medex*	*Medex*
Alarm Silence Interval	2 minutes	2 minutes	2 minutes
Near Empty Alarm Interval	5 minutes	5 minutes	5 minutes
Alarm Volume (Loudness)	2	4	3
Key Click Volume	2	2	2
Syringe Model & Type	BD, Monoject, Terumo	BD, Monoject, Terumo	BD, Monoject, Terumo

5. CONTROLLING ONSCREEN APPEARANCE

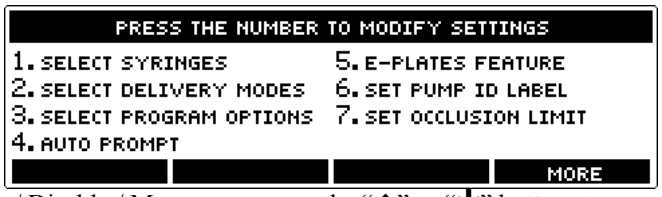
There are two features of custom programming which allow controlling how your menu screens look. These are:

- Moving or Reordering Entries
- Enabling / Disabling / Moving a Page Break

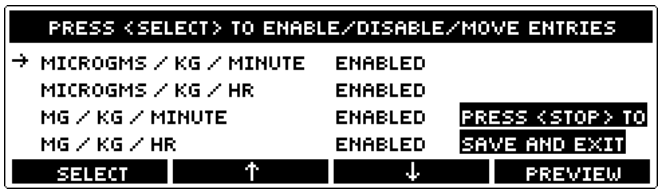
5.1. Reordering Features Onscreen

The *Medfusion 3500* infusion pump is shipped with the *General defaults* delivery modes enabled. You can rearrange the order of precedence of items onscreen through custom configuration. Their order on the SELECT DELIVERY MODES configuration screens determines where they appear on the SELECT THE MODE or PROGRAM OPTIONS screens when enabled. It has no effect on how they work. All you are doing is moving lines around onscreen.

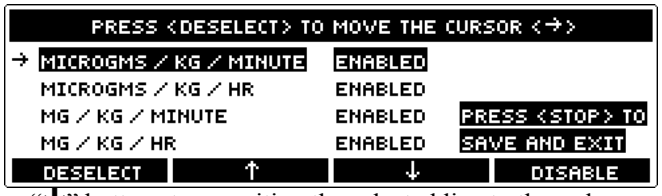
1. Begin custom configuration and choose SELECT DELIVERY MODES by pressing its number.



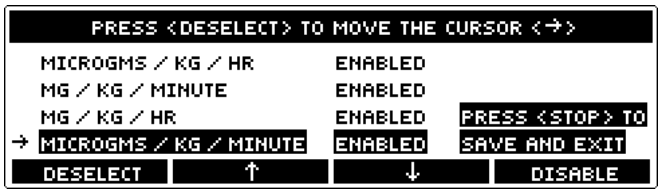
2. At the Enable / Disable / Move screen, use the "↑" or "↓" buttons to move the "→" to the line you wish to move.



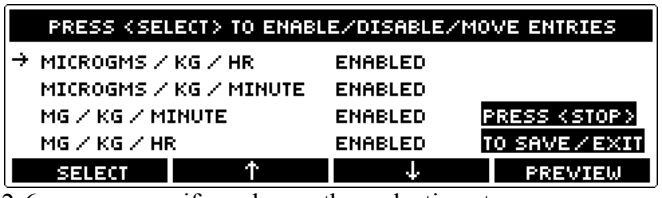
3. Press the Select button to choose the line and put the highlight on it.



4. Use the "↑" or "↓" buttons to reposition the selected line to the order you want it to appear onscreen.



5. Press Deselect button. This fixes the selection where you placed it.
6. You may now press Preview to check the appearance of the actual screen. Then press Continue to return.



7. Repeat steps 2-6 as necessary if you have other selections to move.
8. These changes do not take effect until you save them.
9. Press Stop to save your changes and exit to the Modify Settings screen. Or press Back to exit to the Save Changes Yes / No screen. Answer NO to exit without saving changes.

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5.2. Enabling / Disabling / Moving the Page Break

The *Medfusion 3500* has one page break you can use to control how your SELECT THE MODE screen appears.

This page break is found in the Select Delivery Mode reconfiguration screens. The page break feature works hand in hand with the move entries to give control of how and where information displays onscreen.

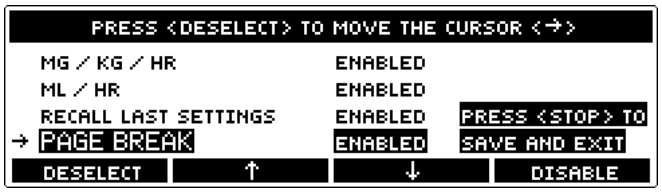
5.2.1. Rules for Using Page Breaks

Below are the rules of thumb for working with page breaks:

- You may have as many as 8 items on any menu screen.
- You may reorder them in any preference you wish them.
- You have 1 page break you can place wherever you wish in the order of these items.
- Reordering items and the page break are purely cosmetic customizations.
- The system automatically inserts a page break after the 8th entry on every screen.

5.2.2. Steps for Placing the Page Break

1. First rearrange the lines as you wish them to appear on the menu screen.
2. Now use the "↑" or "↓" buttons to move the marker "→" to "PAGE BREAK".
3. Press the **Select** button to choose the line and put the *highlight* on it.
4. Use the "↑" or "↓" buttons to move the "PAGE BREAK" to the place you want it to appear in the onscreen list.



5. Press the Deselect button. The page break becomes fixed in this position when you save your changes and exit custom configuration.

Reordering is Merely Cosmetic	Reordering the appearance of items on screen is a purely "cosmetic" customization, and does not effect function of an option or feature

6. ENABLING / DISABLING / MOVING SYRINGES

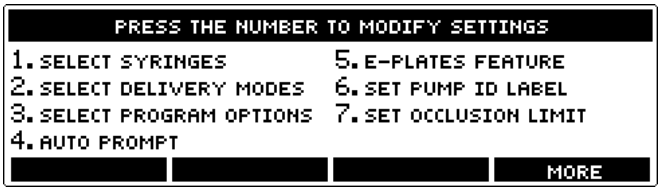
The first choice on the MODIFY SETTINGS screen is usually SELECT SYRINGES. This selection is made *by* syringe *model*. This is where you tell the pump *which syringes it can use*.

Only the Enabled	When you enable a syringe model, you are telling the pump it can use those syringes. Parameters and characteristics of those syringes are made available for use. During setup of any infusion of medications or fluids, only enabled syringes appear for selection and use.

6.1. Enable or Disable Syringes by Model

The *Medfusion 3500* infusion pump is engineered to work precisely within the physical parameters of specific syringes models. Thus it comes with a database of syringes that are available for use with the pump.

1. At the MODIFY SETTINGS screen, press the number for SELECT SYRINGES.



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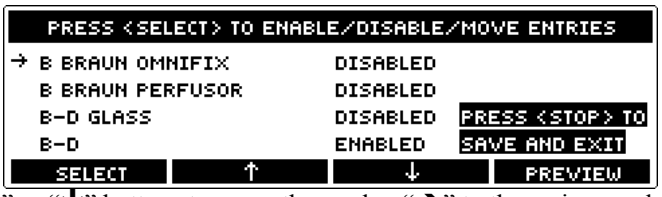
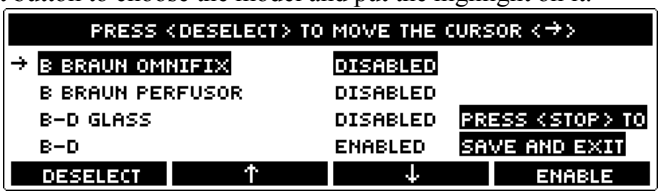
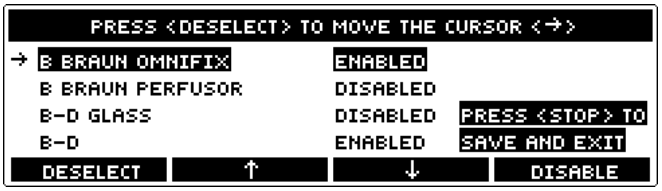
2. YOU now see onscreen a list of syringes by model. To the right of list is either "**Enabled**" or "**Disabled**".



3. Use the "↑" or "↓" buttons to move the marker "→" to the syringe and manufacture you wish to enable or disable.
4. Press Select button to choose the model and put the highlight on it.



5. Press either "**Enable**" or "**Disable**" (depending on what you are doing). Notice how the screen changes.



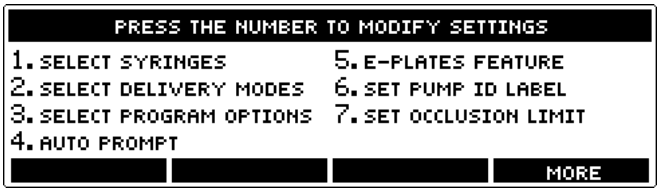
6. If you wish, you may now move the selection onscreen with the "↑" or "↓" buttons.
7. Press Deselect button to "let go" of the selection.
8. If you wish to enable / disable another syringe by model, repeat steps 3-7.
9. Press Stop to save your changes and exit to the Modify Settings screen. Or press Back to exit without saving changes.

Warning! Disabling Syringes	Once you disable a syringe selection, its settings are no longer available during infusion setup. Inform personnel using this pump they should **never** use a syringe whose settings are not available during setup. The result could be *over-infusion* or *under-infusion*, with injury or death to patient.

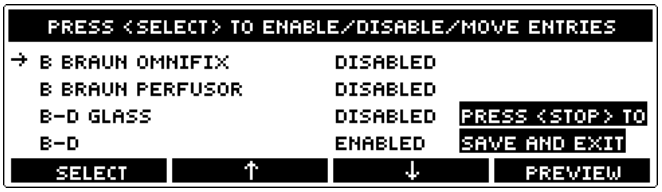
6.1.1. Reordering Syringe Model Order

Moving each of these items to rearrange their order of appearance onscreen is really part of the steps for enabling or disabling the features. But it is less confusing to describe it separately.

1. At the MODIFY SETTINGS screen, press the number for SELECT SYRINGES.



2. You now see onscreen a list of syringes by model. To the right of list is either "**Enabled**" or "**Disabled**".



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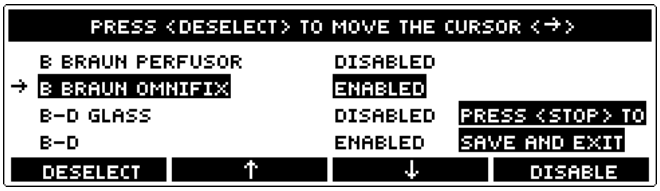
3. Use the "↑" or "↓" buttons to move the marker "→" to the option you wish to move.
4. Press Select button to choose the option and put the highlight on it.
5. Now use the "↑" or "↓" buttons to move the option to the new location in the list.



6. Press Deselect button to "let go" of the selection.
7. If you want to move another option, repeat steps 3-6.
8. Press Stop to save your changes and exit to the Modify Settings screen. Or press Back to exit without saving changes.

7. ENABLING / DISABLING / MOVING DELIVERY MODES

The *Medfusion 3500* infusion pump comes with 17 different delivery modes, plus 7 options for further customizing infusion setup.

7.1. Table of Delivery Modes

Below is an alphabetized table of the delivery modes, and their features & options:

Delivery Mode	What it Does
Custom Dilution	The *custom dilution* mode is a form of body weight delivery where you program a target delivery rate and the pump calculates the drug dilution to meet your target. The settings required are: Initial (undiluted) drug concentration; patient's weight; target dose rate; target total volume (drug plus diluting fluid).
Volume / Time	During *volume / time* delivery, the pump delivers a specific volume per specified time. The screen indicates the effective delivery rate and time remaining to complete the infusion.
Intermittent Volume / Time	A combination of intermittent dosing, and volume / time dosing, where the pump delivers a specific volume per specified time, then pauses a set time, then delivers another dosage, etcetera.
Micrograms / Kg / Hour	This delivers a dosage based on *micrograms* of medication or fluid per *kilogram of body weight* per *hour*.
Micrograms / Kg / Minute	This delivers a dosage based on *micrograms* of medication or fluid per *kilogram of body weight* per *minute*.
Milligrams / Kg / Hour	This delivers a dosage based on *milligrams* of medication or fluid per *kilogram of body weight* per *hour*.
Milligrams / Kg / Minute	This delivers a dosage based on *milligrams* of medication or fluid per *kilogram of body weight* per *minute*.
Units/Kg/Hour	This delivers a dosage based on *Units* of medication or fluid per *kilogram of body weight* per *hour*.

Delivery Mode	What it Does
Micrograms / Hour	This delivers a dosage based on *micrograms* of medication or fluid *per hour*.
Micrograms / Minute	This delivers a dosage based on *micrograms* of medication or fluid *per minute*.
Milligrams / Hour	This delivers a dosage based on *milligrams* of medication or fluid *per hour*.
Milligrams / Minute	This delivers a dosage based on *milligrams* of medication or fluid *per minute*.
Milliliter / Hour	This delivers a dosage based on *milliliters* of medication or fluid *per hour*.
Milliunits / Hour	This delivers a dosage based on *milliunits* of medication or fluid *per hour*.
Milliunits / Minute	This delivers a dosage based on *milliunits* of medication or fluid *per minute*.
Units / Hour	This delivers a dosage based on *units* of medication or fluid *per hour*.
Units / Minute	This delivers a dosage based on *units* of medication or fluid *per minute*.
Recall Last Settings	The *recall last settings* feature tells the pump to "remember & insert" the last group of infusion settings used. You may then reuse those settings "as is" to begin another infusion, or modify as necessary the settings on different screens.

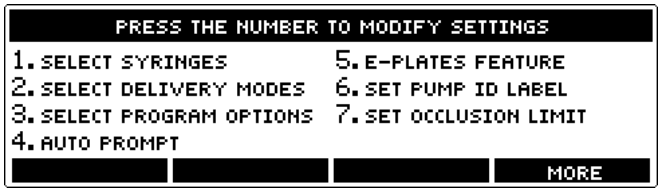
Using Templates to Setup Delivery	What it Does
E-Plates/Library D	Library of fully automatic templates. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. When selected, all preset values are inserted, and pump progresses directly to the BEGIN INFUSION screen. There, you only have to press the **Start** button to begin the dosage.
Library A	Standard template library A. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. You must verify presets at each level by pressing the **Enter** button.
Library B	Standard template library B. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. You must verify presets at each level by pressing the **Enter** button.
Library C	Standard template library C. Shipped from factory with 16 empty templates. May contain templates of presets you can reuse without having to type them each time. You must verify presets at each level by pressing the **Enter** button.

Option	**What it Does**
PAGE BREAK	The *page break* feature is found in the SELECT DELIVERY MODE feature as a part of the CUSTOM PROGRAM configuration utility. It works hand-in-hand with the *move entries* option to help you control how and where feature titles display onscreen.
Custom Program	The *custom program* utility is what you use to customize the settings of the *Medfusion 3500* infusion pump. It is always available and may never be disabled. Your only option for changing Custom Program is to rearrange its position onscreen.
Biomed	The *Biomed* option is what you use to service the *Medfusion 3500* infusion pump. It is always available and may never be disabled. Your only option for changing *Biomed* is to rearrange its position onscreen.

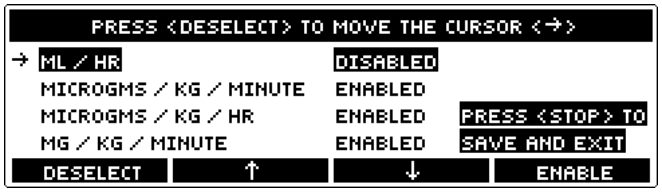
7.2. Enable / Disable / Move Delivery Modes

The *Medfusion 3500* infusion pump has delivery modes you can enable, disable, or customize for infusion deliveries. The pump is shipped with the *General Defaults* settings for all these modes. This means not all features are enabled. And some may be enabled you do not wish to use. The process for enabling or disabling or moving these modes is identical.

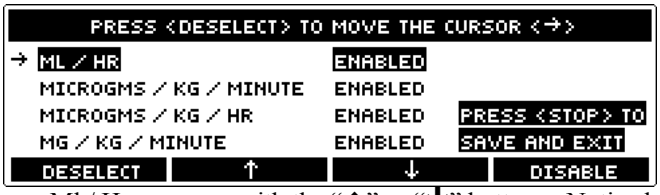
1. Open custom configuration, and go to the MODIFY SETTINGS screen.



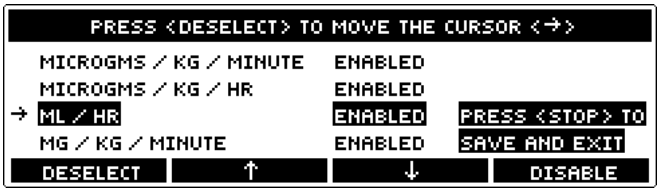
2. Press the **More** button until you locate SELECT DELIVERY MODES. Press its **number** button to call the ENABLE / DISABLE / MOVE screen.



3. At the Enable / Disable / Move screen, use the "↑" or "↓" buttons to move the marker "→"to Ml / Hr.
4. Press Select button to put the highlight on Ml / Hr. Then press Enable. Note how the screen changes.



5. You may move Ml / Hr onscreen with the "↑" or "↓" buttons. Notice how it shifts relative to other items on the list. Place it where you want it to appear on the Select the Mode screen.



6. Press Deselect button to remove the highlight from Ml / Hr.
7. If you want to move another delivery mode, repeat steps 3-6.
8. If you wish, you may press the Preview button to see how this change will look. Then press the Continue button to return to Moving.
9. When ready, press Stop to save your changes and exit to the Modify Settings screen. Or press Back to exit without saving changes.

7.3. Custom Program

The CUSTOM PROGRAM feature is what you use to configure and reconfigure the *Medfusion 3500* infusion pump.

☞ <u>You cannot disable Custom Program</u>. You can only reorder its position on the menu screens.

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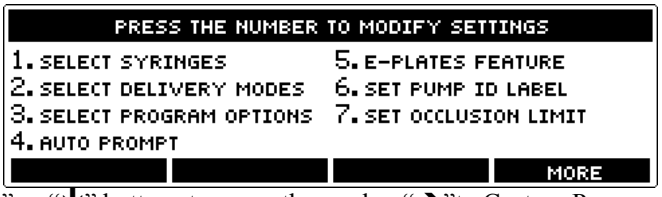
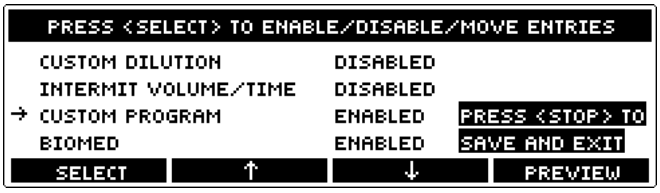
7.3.1. Moving "Custom Program" Onscreen

Moving an item to rearrange its order of appearance onscreen is really part of the enabling or disabling steps. But it is less confusing to describe it separately.

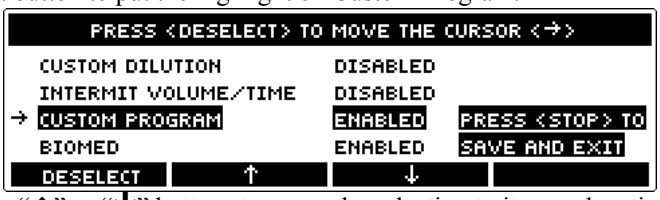
1. Open custom configuration, and go to the MODIFY SETTINGS screen.
2. Press the **number** button to choose SELECT THE DELIVERY MODE.



3. Use the "↑" or "↓" buttons to move the marker "→"to Custom Program.



4. Press Select button to put the highlight on Custom Program.



5. Now use the "↑" or "↓" buttons to move the selection to its new location onscreen.
6. Press Deselect button to "let go" of the selection.
7. If you wish, you may press the Preview button to see how this change will look. Then press the Continue button to return to Moving. If necessary, you may move the feature again until it is where you want it.
8. If you want to move another option, repeat steps 3-6.
9. Press Stop to save your changes and exit to the Modify Settings screen. Or press Back to exit without saving changes.

7.4. Biomed

Even though Biomed is listed along with delivery modes, it is not part of the pump operation, nor part of standard configuration.

☞ <u>You cannot disable Biomed</u>. You can only reorder its position on the menu screens.

7.4.1. What Does Biomed Do?

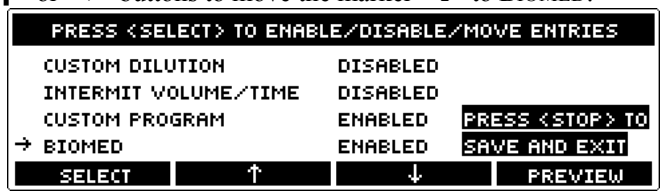
The Biomed feature is the *special maintenance utility* intended for use only by trained service technicians. It is a part of the Maintenance and Calibration service on the *Medfusion 3500* infusion pump.

- Biomed is used to perform diagnosis and troubleshooting on the infusion pumps.
- Biomed is used to calibrate the pump's functions.
- Biomed configuration has its own security access code.
- Only authorized personnel should use the Biomed maintenance utility.

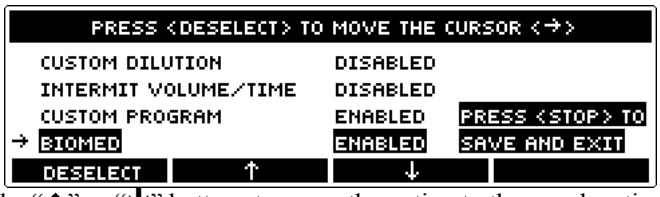
7.4.2. Moving "Biomed" Onscreen

Moving an item to rearrange its order of appearance onscreen is really part of the enabling or disabling steps, but it is less confusing to describe it separately.

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Press the **number** button to choose SELECT THE DELIVERY MODE.
3. Use the "↑" or "↓" buttons to move the marker "→"to BIOMED.



4. Press Select button to put the highlight on Biomed.



5. Now use the "↑" or "↓" buttons to move the option to the new location onscreen.
6. Press Deselect button to "let go" of the selection.
7. If you wish, you may press the Preview button to see how this change will look. Then press the Continue button to return to Moving. If necessary, you may move the feature again until it is where you want it.

8. If you want to move another feature, repeat steps 3-6.
9. Press Stop to save your changes and exit to the Modify Settings screen. Or press Back to exit without saving changes.

8. ENABLING / DISABLING / MOVING PROGRAM OPTIONS

The *Medfusion 3500* infusion pump has several specific options you can enable or disable, which can be used to modify infusion deliveries.

8.1. Table of Program Options

Below is a table of these program options, and a definition of what each controls:

Option	What it Controls
Standby	*Standby* is an option that allows setting the pump for an infusion, then delaying advisory alarms for a programmed interval of time. • The pump **does not automatically start** an infusion at the end of the standby. • Instead, the pump triggers an alarm at the end of the standby period to tell you to either **Start** or **Cancel** the infusion. Enabling *standby* adds the option to every infusion setup.
Loading Dose	Enabling the *loading dose* is a specified volume (or dose) of drug infused as a one-time-only bolus prior to the start of normal delivery. You may also configure loading dose to be automatically "prompted" or "asked for" the programming steps. Enabling *loading dose* adds the option to every infusion setup.
Bolus Dose	A *bolus dose* is an optional parameter of some delivery modes wherein you specify a bolus volume to be delivered in a specified time. You may also configure bolus dose to be automatically "prompted" or "asked for" the programming steps. Enabling *bolus dose* adds the option to every infusion setup.
Volume Limit	A *volume limit* is an option available for most delivery modes (except *volume/time* and *intermittent*). On reaching the preset volume limit, the pump stops – or changes to KVO if a keep vein open rate has been programmed. Volume limit is based on the quantity of program volume delivered. Before you can start a new volume limit, the old PVD (program volume delivered) or PDD (program dose delivered) is automatically cleared. Enabling *volume limit* adds the option to every infusion setup where it applies.
KVO	The *keep vein open* (KVO) rate is an option available for most delivery modes (except *volume/time* and *intermittent volume/time*). • You must have a *volume limit* programmed for KVO to work. After a volume limit is reached, a low rate (KVO) is set to maintain patency of the infusion site. • The range of rates available appears on the ENTER KVO RATE screen. KVO rates are calculated by syringe size and its minimum flow rate. • The programmed KVO rate must be *less than* the normal delivery rate and *greater than or equal to* minimum flow rate for the syringe. Enabling this adds the option to every infusion setup.
Save to Library	With the *save to library* feature enabled, you may save any group of infusion delivery settings to any template in any of the four libraries. It is recommended using this feature only as a configuration tool, then disabling it before allowing user access to the pump. If you allow unlimited access to this "Save to Library" feature, then there is no security for the contents of any library or its templates.
Toggle PVD / PDD	With this feature enabled, you have the option of toggling between displaying either the *program volume* delivered or the *program dosage* delivered. The pump maintains the information for both, based on the set infusion delivery, so you can toggle between them without losing data. Enabling this adds the option to every infusion setup.
OVERRIDE OCCL LIMIT	With this feature enabled you have the option of overriding the default occlusion limit and setting a desired occlusion limit. (The default occlusion limit for a 1cc syringe is VERY HIGH (VH) and cannot be overridden)

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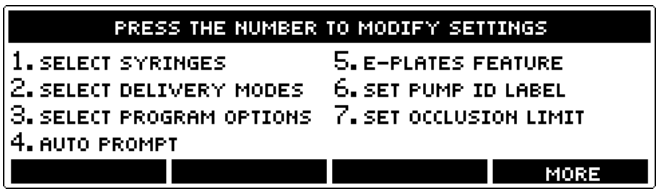
Option	What it Controls
Toggle Rapid Occlusion Detection	With this feature enabled, you have the option during the current infusion of toggling between enabling and disabling the Rapid Occlusion Detection feature. Rapid Occlusion Detection recognizes an occlusion to flow much more rapidly then the conventional force sensing method
Override Alarm Volume	With this feature enabled you have the option during the current infusion of setting and testing the alarm volume.
Toggle Empty Tone	With this feature enabled you have the option of disabling the empty tone during the current infusion
Toggle Near Empty Tone	With this feature enabled, you have the option of disabling the near empty tone for the current infusion
Delayed Start	The delayed start option allows you to delay the start of the infusion for up to 6 hours

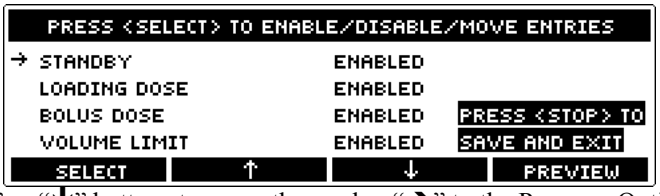
8.2. Enable / Disable / Move Program Options

Besides Syringes and Delivery Modes, the *Medfusion 3500* has program options you can enable, disable, and/or move onscreen. The process for doing this is identical for each.

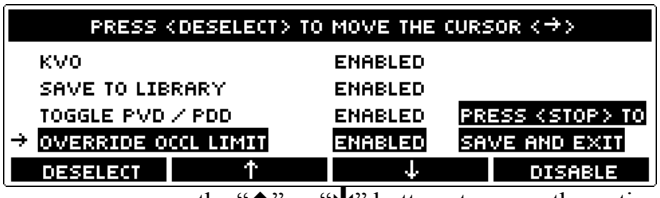
1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.



2. Press the More button until you locate Select Program Options. Press its number button to call the Enable / Disable / Move screen.



3. Use the "↑" or "↓" buttons to move the marker "→" to the Program Option you wish to enable, disable, or move.
4. Press Select to put the highlight on Program Option you wish to enable, disable, or move. Then press Enable or Disable (depending on the current status of the option). Note how the screen changes.



5. If you wish, you may now use the "↑" or "↓" buttons to move the option to a new location onscreen. Notice how it shifts relative to other items on the list. Place it where you want it to appear on the Select the Mode screen.
6. Press Deselect to remove the highlight from your selection.
7. You can see how the option will appear by pressing the Preview button. And then press Continue to return to the Enable / Disable / Move screen. If it isn't exactly where you want it, use the "↑" or "↓" buttons to move it again.
8. If you want to move another option, repeat steps 3-6.
9. Press **Stop** to save your changes and exit to the MODIFY SETTINGS screen. Or press **Back** to exit without saving changes.

8.2.1. Reordering Program Options

Moving each of these items to rearrange their order of appearance onscreen is really part of the steps for enabling or disabling the features. But it is less confusing to describe it separately.

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Use the "🡅" or "🡇" buttons to move the marker "➔" to the option you wish to move.
3. Press **Select** to choose the option and put the *highlight* on it.
4. Now use the "🡅" or "🡇" buttons to move the option to its new list location.
5. Press **Deselect** to remove the *highlight* from your selection.
6. If you want to move another option, repeat steps 2-5.
7. Press **Stop** to save your changes and exit to the MODIFY SETTINGS screen. Or press **Back** to exit without saving changes.

9. AUTO PROMPTS

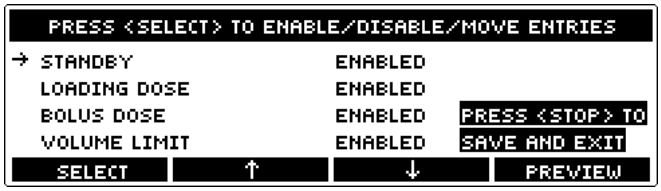
You have the options of enabling or disabling these auto prompts options, and of moving each of these items to rearrange their order of appearance onscreen. Enabling an auto prompt causes that feature to be automatically inserted into the user settings during each infusion setup.

Feature	Explanation
Standby	Standby lets you set the pump for an infusion, then delay starting delivery for as much as 24 hours. This also delays triggering audible advisory alarms. The pump **does not automatically start an infusion** at the end of the standby period. At the end of the delay, the pump triggers an alarm with prompts to tell you to either START or CANCEL the infusion.
Bolus Dose	A *bolus dose* is an optional parameter of some delivery modes wherein you specify a bolus volume to be delivered in a specified time.
Volume Limit	A *volume limit* is option available for most delivery modes (except *volume/time* and *intermittent*). On reaching the preset volume limit, the pump stops – or changes to KVO if a keep vein open rate has been programmed. Volume limit is based on the quantity of program volume delivered.
KVO	The *keep vein open* option is used as a maintenance setting when delivering infusions to patients to keep an infusion site patent between infusions.

9.1. Enable / Disable Auto Prompts

Enabling auto prompts tells the pump to ask the user to review settings for each option enabled. This adds additional steps to the normal delivery programming sequence.

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the AUTO PROMPT feature, and press its number to call its ENABLE / DISABLE / MOVE screen.



3. You now see onscreen a list of options. To the right of this list is either the word "Enabled" or "Disabled".
4. Use the "🡅" or "🡇" buttons to move the marker "➔" to the selection you wish to enable or disable.
5. Press **Select** button to choose the model and put the *highlight* on it.
6. Press either "**Enable**" or "**Disable**" (depending on what you are doing).
7. Press **Deselect** to remove the *highlight* from your selection.
8. If you wish to enable / disable another selection, repeat steps 3-6.
9. Press **Stop** to save your changes and exit to the MODIFY SETTINGS screen. Or press **Back** to exit without saving changes.

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9.2. Reordering Auto Prompts

Moving each items onscreen to rearrange their order of appearance is part of enabling or disabling the features. But it is less confusing to describe it separately.

1. Find the AUTO PROMPT feature, and press its number to call its ENABLE / DISABLE / MOVE screen.
2. Use the "🡅" or "🡇" buttons to move the marker "➔" to the selection you wish to move.
3. Press **Select** to choose the option and put the *highlight* on it.
4. Now use the "🡅" or "🡇" buttons to move the option to the new location onscreen.
5. Press **Deselect** to remove the *highlight* from your selection.
6. If you want to move another option, repeat steps 2-5.
7. Press **Stop** to save your changes and exit to the MODIFY SETTINGS screen.

10. MISCELLANEOUS SETTINGS

This chapter discusses various miscellaneous settings that you can modify. These include: pump ID, occlusion limits, default bolus rate, maximum flow rate, etc.

10.1. Pump ID Label

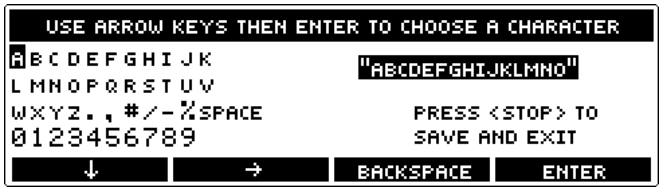
This feature allows giving each *Medfusion 3500* infusion pump its own identification name and/or number. This can be useful for identifying not only the pump, but also the pump's type of configuration setup.

- To identify the pump, give it a unique name containing letters and/or numbers.
- To identify the configuration setting, create a name for each type of configuration setup you are using in various departments, units, or organizations.
- You should not use the ID as "physical security" for the pump. Use an engraving tool or security tag for physically identifying the pump. Anyone with the configuration password can change the software ID.
- Anyone with the configuration password can change the software ID.

10.1.1. Naming the Pump

When you configure the pump ID, you are simply "Naming the Pump".

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the SET PUMP ID feature, and press its number to call it.
3. You now see the CHOOSE A CHARACTER screen. This is an alphanumeric keypad where you name the pump.
4. Use the "➔" or "🡇" buttons to move the marker *highlight* to the letter, numeral or character you wish to type.
5. When ready press either the **Enter** button to select this letter, numeral, or character.
6. Repeat steps 4 & 5 until you have typed all the letters and/or numerals you need to name the pump.
7. Press **Stop** to save your changes and exit to the MODIFY SETTINGS screen. Or press the **Back** button to exit without changing the pump ID.



10.1.2. Pump Naming Convention

Basically, you can give any pump any name you wish. The name simply *identifies the pump for your use*. Use the naming convention established by your unit, department, organization, or hospital. The best approach is naming pumps so you can readily recognize contents and function, (*e.g.*, by specific unit, department, organization, or hospital). Below are naming guidelines:

- There is a 15 character limit on naming pumps.
- Use any combination of letters, spaces, symbols, and numbers available on the CHOOSE A CHARACTER screen.
- You can give the same name to any pump or group of pumps.
- You can give the same name to a template within a library. Avoid this to avoid confusion.

- Pump ID is copied when cloning configuration from pump to pump.

10.1.3. Typing Pump ID Using the PC Configuration Clone

If you are using the PC version of the custom configuration, you can type the letters by clicking on them with the mouse pointer.

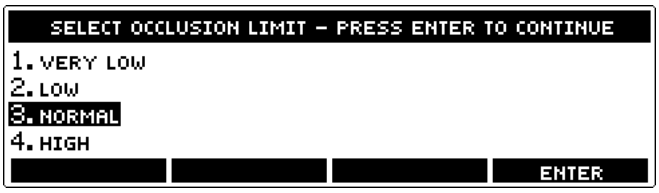
10.2. Setting Occlusion Limits

There are 4 different levels of *occlusion limits* programmed into the *Medfusion 3500* infusion pump. They are:

- Very Low
- Low
- Normal
- High

Below are the steps for setting the Occlusion Limits:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the SET OCCLUSION LIMIT feature, and press its number to call it.
3. You now see the SELECT OCCLUSION LIMIT screen. The choices are: *Very Low*, *Low*, *Normal*, and *High*.



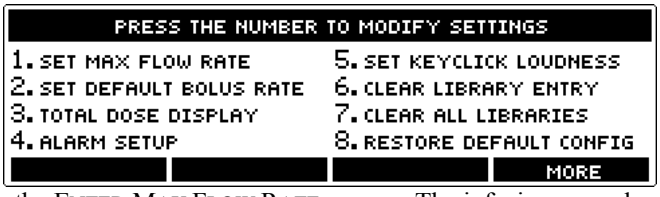
4. Press the **number** button for the occlusion limit you wish this pump to use. This puts the *highlight* on your choice.
5. When ready press the **Enter** button to select this occlusion limit. Or press the **Back** button to exit without changing the Occlusion Limit.

10.3. Set Maximum Flow Rate

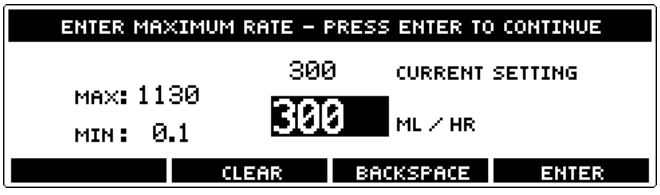
The *maximum flow rate* is the fastest infusion flow medication or fluid you wish the pump to be able to deliver.

Below are the steps for setting the Maximum Flow Rate:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the SET MAX FLOW RATE feature, and press its number to call it.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. TOTAL DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

3. You now see the ENTER MAX FLOW RATE screen. The infusion pump has a maximum flow rate range from *0.1 – 1130 ml/hr*.



4. Use the **number** buttons to type the maximum flow rate you wish the pump to use.
5. When ready press the **Enter** button to set the new maximum flow rate limit. Or press the **Back** button to exit without changing the maximum flow rate.

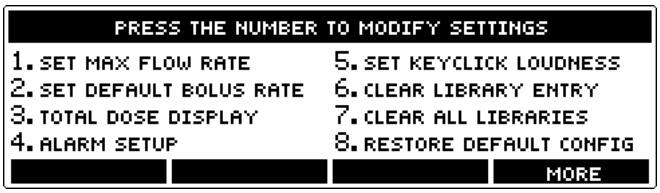
10.4. Set Maximum Bolus Rates

A *bolus dose* is an optional parameter of some delivery modes wherein you specify a bolus dose to be delivered in a specified time. Set Maximum Bolus Rate allows you to set the maximum flow rate at which the bolus dose can be

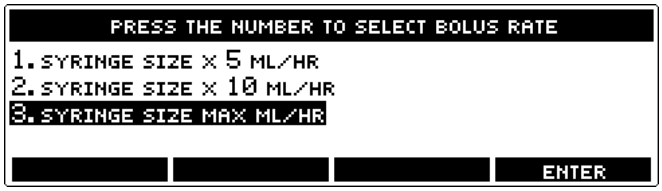
delivered. The pump presets a "default" *Bolus Delivery Time* from this parameter. The user may override this default time.

Below are the steps for setting the *Maximum Bolus rates*:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the SET DEFAULT BOLUS RATE feature, and press its number to call it.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. TOTAL DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

3. You now see the SELECT BOLUS RATE screen. The options are:
   - Syringe Size x 5 ml/hr.
   - Syringe Size x 10 ml/hr.
   - Syringe Size Max ml/hr.
4. Use the number buttons to select the highlight default Bolus rate you wish the pump to use.
5. When ready press the Enter button to set the new Bolus rate limit. Or press the Back button to exit without changing the Bolus rate.

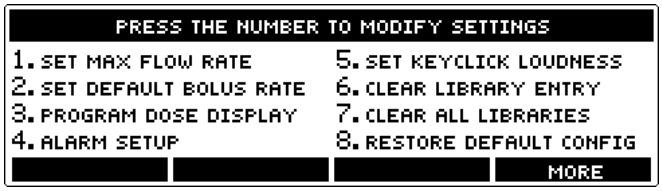


10.5. Enable / Disable Program Dose Display

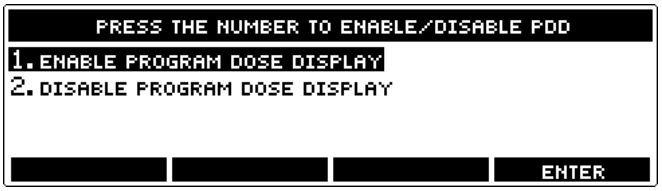
The pump has the option of displaying during infusion the *program volume delivered* or *program dosage delivered.* While running an infusion delivery, the pump stores and displays the program volume delivered. When this option is enabled the pump displays the program dose delivered instead.

Below are the steps for enabling / disabling the program dose or volume display:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. PROGRAM DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

2. Find the PROGRAM DOSE DISPLAY feature, and press its number to call it.
3. You now see the ENABLE / DISABLE PDD screen.
4. Use the number buttons to put the *highlight* on either Enable or Disable.



5. When ready press the **Enter** button to set the new Program Dose Display status. Or press the **Back** button to exit without changing the Program Dose Display status.

10.6. Setup & Test Pump Alarms

The *alarms* are the warnings or cautions the pump sounds to let you know something is happening or about to happening. Alarm setup has four major options:

- Alarm Style
- Alarm Silence Time
- Near Empty Alarm Time
- Alarm Loudness

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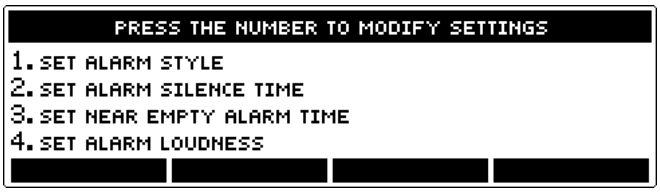
10.6.1. Setting Alarm Style

The *Medfusion 3500* infusion pump has two different alarm styles. They are:

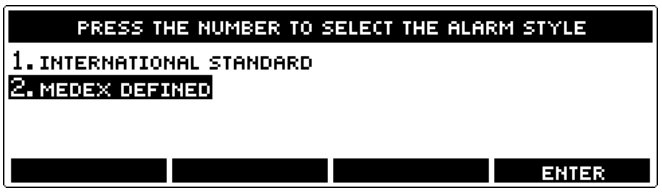
- International Standard Alarms
- Medex Defined Alarms

The pump is shipped with the Medex Defined Alarms enabled. Below are the steps for selecting between these two alarm style settings:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the ALARM SETUP feature, and press its number to call it.
3. You now see the alarm MODIFY SETTINGS screen. FIND SET ALARM STYLE and press its **number**.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET ALARM STYLE
2. SET ALARM SILENCE TIME
3. SET NEAR EMPTY ALARM TIME
4. SET ALARM LOUDNESS

4. Use the number buttons to put the *highlight* on either INTERNATIONAL STANDARD or MEDEX DEFINED.



5. When ready press the **Enter** button to set the new ALARM STYLE status. Or press the **Back** button to exit without changing the ALARM STYLE status.

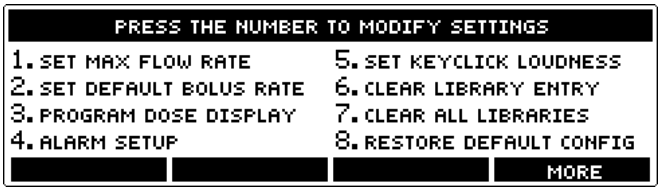
10.6.2. Set Alarm Silence time

The alarm silence time is the interval for which the alarm waits before resounding after someone presses "🔔" the Alarm Silence button.

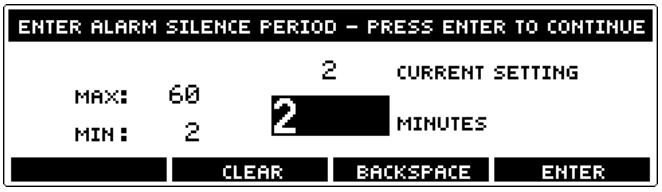
- The *alarm silence time* has a range from **2 – 60** minutes.
- The *factory default* setting is **2** minutes.

Below are the steps for setting between the ALARM SILENCE TIME:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the ALARM SETUP feature, and press its number to call it.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. PROGRAM DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

3. You now see the alarm Modify Settings screen. Find Set Alarm Silence Time and press its number



4. You now see the Enter Alarm Silence Period screen. There is a 2 – 60 minute range.
5. Use the number buttons to type the time in minutes you want to alarm to wait before resounding after someone presses 🔔 the Alarm Silence button.
6. When ready press the Enter button to set the new Alarm Style status. Or press the Back button to exit without changing the Alarm Silence Period status.

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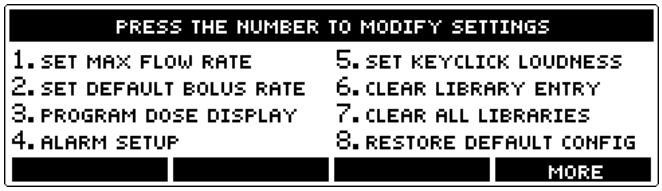
10.6.3. Set Near Empty Alarm Time

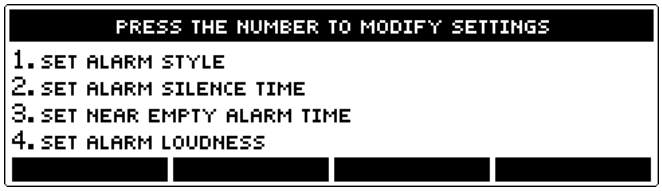
The *near empty alarm time* is the interval before which the syringe is empty and the pump sounds a warning alarm. The pump calculates "near emptiness" based on the size of the syringe divided by the amount of dosage or fluid inside the syringe times the rate of delivery.

Below are the steps for setting between the NEAR EMPTY ALARM TIME:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the ALARM SETUP feature, and press its number to call it.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. PROGRAM DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

3. Find SET NEAR EMPTY TIME and press its number button.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET ALARM STYLE
2. SET ALARM SILENCE TIME
3. SET NEAR EMPTY ALARM TIME
4. SET ALARM LOUDNESS

4. You now see the ENTER NEAR EMPTY TIME screen. There is a ***0 – 60 minute range***.

5. Use the **number** buttons to type the time *in minutes* you want to alarm to sound before the syringe is empty. Setting near empty time to zero disables this alarm. In this case, only the empty alarm is enabled.
6. When ready press the **Enter** button to set the new NEAR EMPTY TIME status. Or press the **Back** button to exit without changing the NEAR EMPTY TIME alarm status.

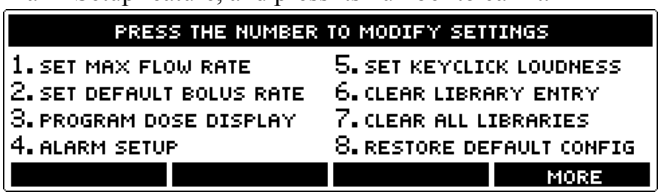
10.6.4. Set Alarm Loudness

The *Medfusion 3500* infusion pump has five levels of *alarm loudness* you can choose from. These range from soft to very loud. Set alarm loudness to whatever level seems appropriate for the patient care environment where the pump is used. Test the alarm loudness and select a volume appropriate for your needs.

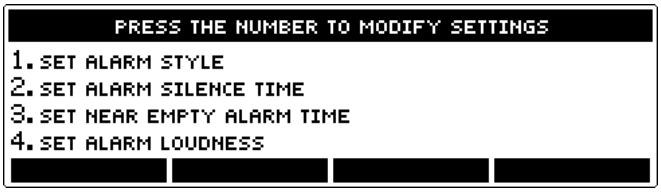
Level	Loudness	Suggested Area of Use
1	Very Soft	ICU, CCU, NICU
2	Soft	Geriatric, Chronically Ill
3	Normal	Normal
4	Loud	Pediatric
5	Very Loud	Emergency Room

Below are the steps for setting the ALARM LOUDNESS:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the Alarm Setup feature, and press its number to call it.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. PROGRAM DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

3. Find the Set Alarm Loudness feature, and press its number to call it.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET ALARM STYLE
2. SET ALARM SILENCE TIME
3. SET NEAR EMPTY ALARM TIME
4. SET ALARM LOUDNESS

4. You now see the Set Alarm Loudness screen. There are 5 levels of loudness to choose from.

5. Use the number buttons to put the highlight on the loudness level you wish to use.
6. You can use the "Test" option to verify the loudness of each level.
7. When ready, press the Enter button to set the new Alarm Loudness status. Or press the Back button to exit without changing the Alarm Loudness status.

10.6.5. Test Alarm Loudness

If you are unfamiliar with the *Medfusion 3500* infusion pump, then it is a good idea to test the sound levels before select one to use. It is very simple to test the alarm loudness level:

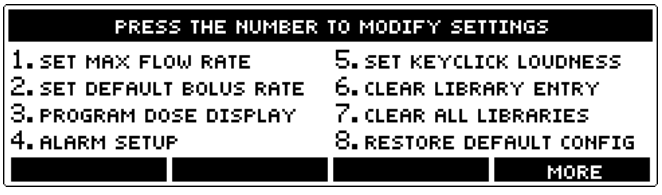
1. You must be at "Step 5" of the preceding list of steps.
2. Put the *highlight* on the loudness level you wish to test.
3. Press the **Test** button.
4. The alarm sounds at the selected level.
5. To test the other alarm levels, simply press their corresponding number button.
6. To end the test, press the "🔔" button. Make your alarm level selection by pressing the **Enter** button. Or press the **Back** button to exit without changing the ALARM LOUDNESS status.
7. Press the **Back** button to exit to the MODIFY SETTINGS screen.

10.7. Set & Test Keyclick (Beep) Loudness

The *keyclick* is the "beeping" sound the pump makes when you press a button. The *Medfusion 3500* infusion pump has five levels of *keyclick loudness* – ranging from OFF to very loud. Set loudness to whatever level seems appropriate for the patient care environment where the pump is used.

The steps for setting the KEYCLICK LOUDNESS are given below:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the SET KEYCLICK LOUDNESS feature, and press its number to call it. You may have to press the **More** button until you find it.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. PROGRAM DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

3. You now see the ADJUST LOUDNESS screen. There are **5 levels** of loudness to choose from onscreen.

4. Press a **number** button to put the *highlight* on the loudness level you wish to use.
5. You can use the "Test" option to check the loudness of each level before making your final choice.
6. When ready, press the **Enter** button to set the new KEYCLICK LOUDNESS status. Or press the **Back** button to exit without changing the KEYCLICK LOUDNESS status.

10.7.1. Testing Keyclick (Beep) Loudness

If you are unfamiliar with the *Medfusion 3500*, then you'll probably need to test the beep loudness before setting it.

1. You must be at "Step 4" of the preceding list of steps.
2. Select the loudness level to test.
3. Press the **Test** button.
4. The button "beeps" at the selected loudness.
5. To test other alarm levels, simply press their corresponding **number** button. Then press the **Test** button again.
6. Save your loudness level selection by pressing the **Enter** button. Or press the **Back** button to exit without changing the KEYCLICK LOUDNESS status.

11. WORKING WITH LIBRARIES & TEMPLATES

The *Medfusion 3500* has 4 libraries that come with 16 templates per library. The pump is shipped with all these templates empty and nameless. So which are used, and what they are named, depends on the pump's custom configuration. A *library* is here defined as a group or set of templates. A *template* is defined here as a "user defined" stored record of infusion settings which load from memory. It is a computer file where configuration information is stored.

Templates allow delivering standard fluid or medication infusions – without your having to "type" individual dosage values each time you begin an infusion. So they are a means of *automating* the pump setup process. Think of them as a "*shortcut*" you can use for delivering standard infusions. Program them once, and use them whenever needed.

The pumps have <u>two types</u> of libraries:

- There is the ***E-Plates Library***. This feature is enabled separately within customization. (If the E-Plate library feature is not needed, it may be disabled. Disabling the E-Plate library automatically enables Standard Library D)
- The others are the 3 Standard Libraries A, B, and C, (and D if E-Plates have been disabled). They are part of the SELECT DELIVERY MODES customization.

The E-Plates Library and Standard Libraries function slightly differently, and may be used differently.

11.1. Default & Other Library Settings

The *Medfusion 3500* infusion pump is shipped with all 16 templates <u>*completely empty*</u> in all 4 Libraries.

☞ If you save infusion settings to the templates, and then <u>restore default settings</u> for Anesthesia, General, or NICU, this does not overwrite your libraries.

These library templates are intended to provide each unit, department, organization, or hospital with a means of automating the setup process. So the templates are left blank when shipped to let everyone preset the libraries to meet their own needs.

11.2. What Are Standard Libraries Templates?

The standard libraries are an option available through configuring Select Delivery Modes. Standard libraries templates contain all the settings for running an infusion as a group of preset values.

- When you select & use a library template, the pump recalls all the infusion delivery presets for each level, (*e.g.*, dosage, rate, patient weight).
- However, the pump <u>does not</u> automatically proceed to the BEGIN INFUSION screen.

- The pump does not automatically select syringe model and size.
- The user must confirm each setting individually by pressing the Enter button.
- This means the user should "step through" and review each setting before accepting it.
- These standard libraries also allow modifying settings while stepping through preset values.

11.3. Enable / Disable Standard Library Usage

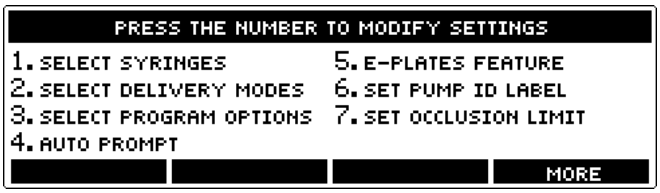
Depending on your pump's configuration, standard libraries *may or may not* be available for immediate use. If you cannot find them as a feature of your pump, then they must be enabled through custom configuration. They are part of the SELECT DELIVERY MODES customization.

Only the Authorized	If you have authorization, you may use custom configuration to enable or disable standard libraries. If not, ask the person responsible for custom configuration to make this change for you.

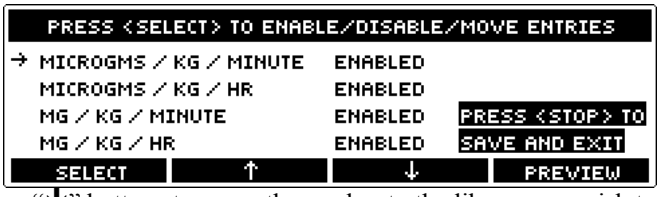
All such standard dosage templates must be setup according to the standards & practices of your hospital, unit, or organization.

Below are the steps for enabling or disabling standard libraries for use with the pump:

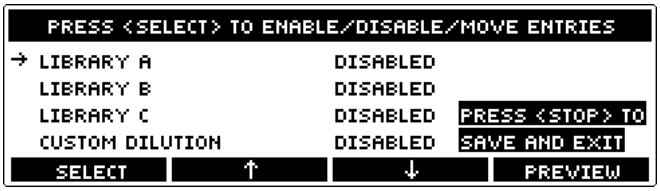
1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the SELECT DELIVERY MODES feature, and press its **number** to call it. You may have to press the **More** button until you find it.



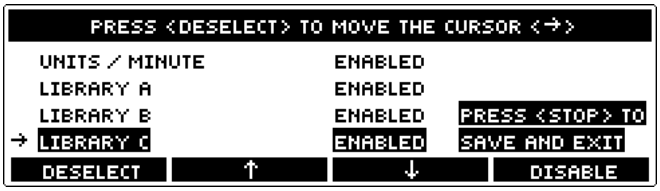
3. You now see the Enable / Disable / Move Entries screen.



4. Use the "↑" or "↓" buttons to move the marker to the library you wish to enable or disable.



5. Press Select button to choose the library and put the highlight on it.



6. Press either "Enable" or "Disable" (depending on what you are doing).
7. If you wish, you can reorder this items position on the setup menu. Use the "↑" or "↓" buttons to move the library to a new place in the list
8. Press Deselect to remove the highlight from your selection.
9. If you wish to enable / disable / move another library, repeat steps 4-8.
10. You can press the Preview button during this process to check how the modified screen appears.
11. When ready, press Stop to save your changes and exit to the Modify Settings screen.

11.3.1. Reordering Library Display Position

Moving each of these items to rearrange their order of appearance onscreen is really part of the steps for enabling or disabling the features. But it is less confusing to describe it separately.

1. Open Custom Configuration, and go to the MODIFY SETTINGS screen.
2. Use the "↑" or "↓" buttons to move the marker "➔" to the library you wish to move.
3. Press "**Select**" to choose the option and put the *highlight* on it.
4. Now use the "↑" or "↓" buttons to move the library to its new place in the list.
5. Press **Deselect** to remove the *highlight* from your selection.
6. If you want to move another option, repeat steps 2-5.
7. Press **Stop** to save your changes and exit to the MODIFY SETTINGS screen.

11.4. What Are E-Plates Library Templates?

The E-Plates Library contains templates of stored settings, including syringe size, rate of dosage, size of dosage, patient's weight, and so on. ("E-Plates" is an abbreviation for "Electronic Templates"). Its difference from a standard library template is this:

- The *Standard Library templates* load the settings, but the user must confirm each setting individually by pressing the **Enter** button.
- The *E-Plates Library templates* do not prompt users for verification at each level. They automatically load all infusion delivery settings including syringe size and model, and pauses the pump at the BEGIN INFUSION screen. So all you have to do is press the **Start** button to begin delivery.

Warning! Confirm All Settings	Before starting ANY delivery, confirm all programmed infusion settings are correct. When using the E-Plates, both the *Medfusion 3500* automatically apply preset values. Never use an E-Plate without knowing or reviewing its settings.

Create a Written Logbook of E-Plate Contents	It is strongly recommended each organization, hospital, unit, department, etc., maintain a written logbook of the contents of each and every E-Plate, and have this logbook available as a reference resource for personnel using E-Plates in their daily operations.

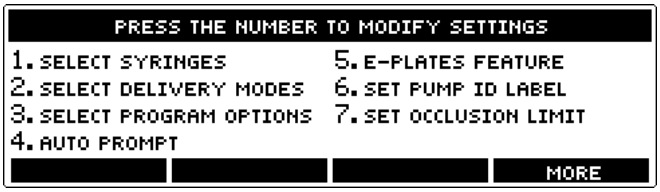
11.5. Enabling / Disabling E-Plates

Depending on your pump's configuration, the E-PLATES LIBRARY *may or may not* be readily available. Medex ships the pumps with E-Plates disabled; and with all its 16 templates empty. If you cannot find it as an option of your pump's operation, then you must enable it through custom configuration.

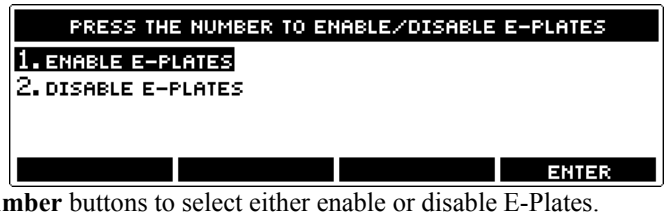
All such standard dosage templates must be setup according to the standards & practices of your hospital, unit, or organization.

Below are the steps for enabling or disabling the E-Plates library for use with the pump:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the E-PLATES FEATURE, and press its number to call it. You may have to press the **More** button until you find it.



3. You now see the ENABLE / DISABLE E-PLATES screen.



4. Use the **number** buttons to select either enable or disable E-Plates.
5. When ready press the **Enter** button to set the new E-PLATES FEATURE status. Or press the **Back** button to exit without changing the E-PLATES FEATURE status.

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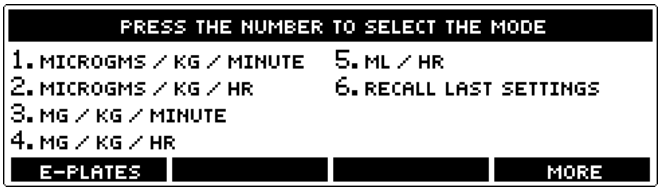
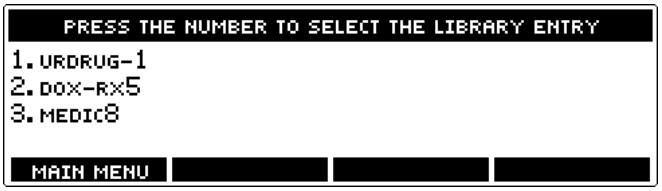
11.5.1. Displaying E-Plates Options

Even though you may enable the E-Plates and Standard Libraries, the pump display does not offer E-Plates and/or Standard Libraries until you actually store a template inside the library.

When you have enabled E-Plates, and have a saved template in the library, the pump lets you know by changing THE SELECT THE MODE screen, and other applicable screens, by showing the word "E-Plates" on the lower left corner of the screen. See the following illustration:


PRESS THE NUMBER TO SELECT THE MODE
1. MICROGMS / KG / MINUTE
2. MICROGMS / KG / HR
3. MG / KG / MINUTE
4. MG / KG / HR
5. ML / HR
6. RECALL LAST SETTINGS
E-PLATES
MORE

If you press this button, the pump displays the templates in the E-Plates library, and the button is now labeled "Main Menu".



If you press this "Main Menu" button again, you return to the previous screen.

11.6. Create & Save A Library Entry (Template)

With the *Medfusion 3500* infusion pump, it is possible to setup a standard infusion, and then save it to a library as a template of preset values.

Creating templates is a configuration function that takes place outside configuration through the **SAVE TO LIBRARY** feature.

It is very easy to save a new template to any of the 4 libraries. All you have to do is

a) Use CUSTOM PROGRAM to enable the SAVE TO LIBRARY feature in the 'SELECT PROGRAM OPTIONS' menu. Save it and exit CUSTOM PROGRAM.

b) Setup ANY infusion delivery you want to save for use on a regular basis. (Be sure to precisely follow the standards & practices of your unit, department, organization, or hospital.)

c) Then use the SAVE TO LIBRARY option to store those settings as a template in your choice of the 4 libraries.

Once stored in a library, these templates can be reused any time you need to start a standard infusion delivery.

11.6.1. Disable "Save to Library" Before Sending Pump to Workplace

Creating templates is a configuration function that takes place outside the CUSTOM PROGRAM configuration feature.

- You must have the SAVE TO LIBRARY feature enabled before you can use it to save a group of presets to a library template. It is enabled through custom configuration.
- But SAVE TO LIBRARY is used outside of custom configuration – in the SELECT DELIVERY MODE.

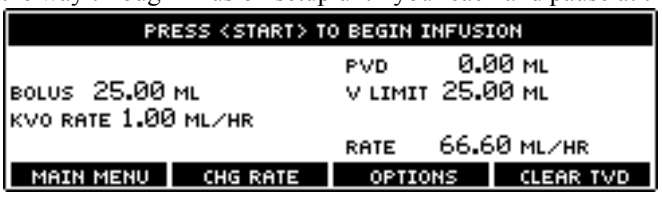
It is very important to control access to creating, saving and/or modifying all library templates. It is strongly recommended you always disable the SAVE TO LIBRARY feature as soon as you are finished creating and saving the stored templates. It should be a rare occasion when it is necessary to create a new template, or modify an old one.

If you leave SAVE TO LIBRARY enabled when the pump goes to its work site, then anyone who uses the pump can change any and all the settings in any and all of the templates stored in the pump. In fact, anyone with physical access to the pump can change these settings. The way to prevent unauthorized changes is to disable the feature used for making those changes.

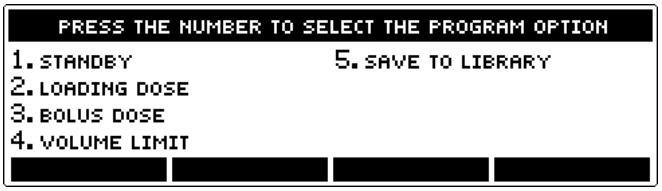
11.6.2. Saving a New Template (Entry)

The steps for saving a new library template are given below – and presume you have SAVE TO LIBRARY enabled:

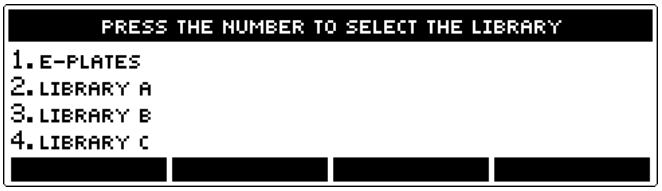
1. Start and complete the setup of any infusion delivery you wish to use as a template.
2. Progress all the way through infusion setup until you reach and pause at the BEGIN INFUSION screen.



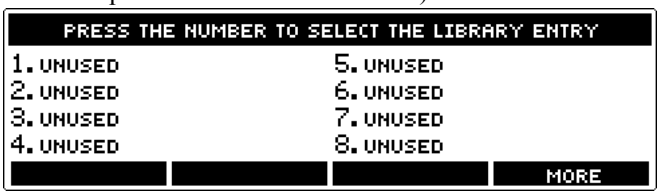
3. Press the **Options** button, and find the SAVE TO LIBRARY feature. (You may have to press **More** to find it.) Then press its **number** button to call the SELECT THE LIBRARY screen.



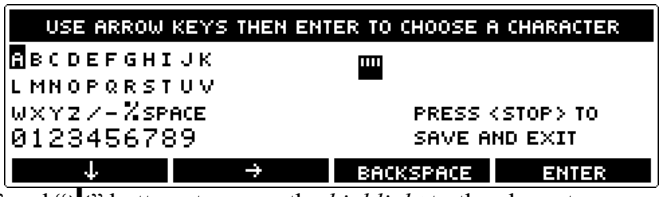
4. Select the LIBRARY you want to use by pressing its **number** button.



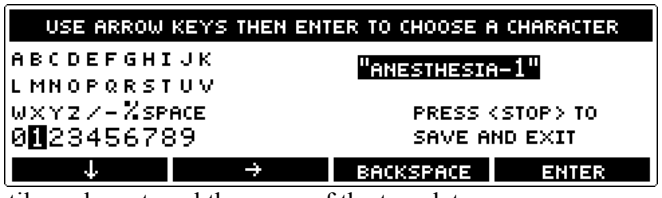
5. Find an unused template, and select it by pressing its **number** button. (You can reuse any template number. The new template *writes over* the old one.)



6. You now see the CHOOSE A CHARACTER screen, where you *name* the template.


USE ARROW KEYS THEN ENTER TO CHOOSE A CHARACTER
A B C D E F G H I J K
L M N O P Q R S T U V
W X Y Z / - % SPACE
0 1 2 3 4 5 6 7 8 9
PRESS <STOP> TO
SAVE AND EXIT
BACKSPACE
ENTER

7. Use the "➔" and "🡻" buttons to move the *highlight* to the character you want to use, then press the **Enter** button to "type".
8. Use **Backspace** to correct errors.



9. Repeat this until you have typed the name of the template.
10. When finished naming the template, press the **Stop** key to save and exit. Or press the **Back** key to exit without saving.

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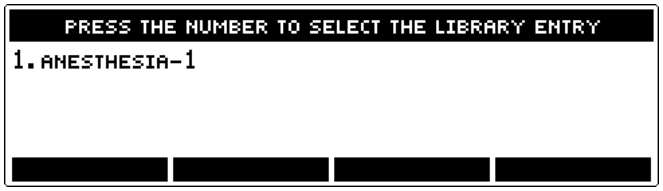
11. If the library is enabled, it appears on the SELECT THE MODE screen. (You may have to press the **More** key to find it.) The template you just saved can be found on the SELECT THE LIBRARY ENTRY screen.



11.6.3. Template Naming Conventions

Basically, you can give any template any name you wish. The name *identifies the template for future use*. Use the naming convention established by your unit, department, organization, or hospital. If there is no naming convention, one should be established to maintain consistency. The best approach is naming templates so you can readily recognize contents and function, (*e.g.*, by specific drug, mode of infusion, and so on). It is recommended creating and maintaining a logbook of all libraries and templates, with a sheet for each template to describe its contents and function. Copies of this logbook should be available to those using the pump. Below are guidelines for naming templates:

- There is a 15 character limit on naming templates.
- Use any combination of letters, spaces, symbols, and numbers found on the CHOOSE A CHARACTER screen.
- You can give the same name to two or more templates within any library. So be careful not to confuse the users.
- As a memory aid with E-plates, it can be useful to include syringe size in the name.

11.6.4. Reusing Templates

When creating and saving groups of presets to templates, you always have the choice of finding an unused template, or reusing any existing template. The template is simply a file you can fill with preset infusion values. You can always:

- Rename it.
- Clear or Delete it.
- Reuse it

If you reuse a template, the new settings simply overwrite the old settings. To avoid confusion, it is recommended using a different name for the new template.

11.6.5. Libraries Must Be Enabled Before You Can Use Them

It is possible to save infusion settings to any of the 16 templates in any of the 4 libraries whether they enabled or disabled. But the libraries must be enabled before you use them to setup an infusion.

The Medfusion 3500 infusion pump is shipped with all the templates empty in all the libraries – and with all 4 libraries disabled. Before you can use an enabled library, it must have infusion presets stored inside at least one template in the library.

11.6.6. Libraries Must Follow Standards & Practices

Whenever you create a template or group of templates of presets within a library, the standard dosages used must always be setup according to the standards & practices of your hospital, unit, or organization – and must ensure correct use of all medications and fluids.

Save to Library is a configuration setting that should never be available while operating the pump. When saving a new template, you must be especially careful to always verify your settings are correct before creating a new template.

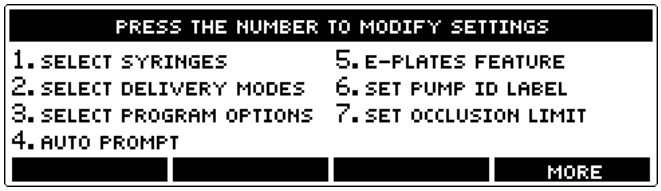
Warning! Verify Settings Before Using	An incorrectly setup library template can cause *over-infusion* or *under-infusion* with resulting potential serious injury or death.

11.6.7. Enabling the Libraries

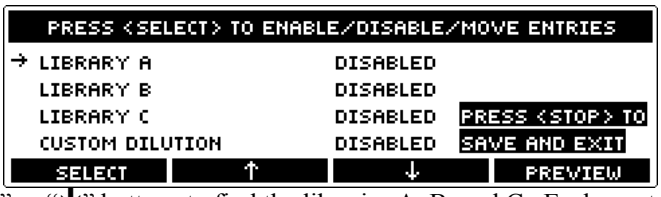
The Medfusion 3500 infusion pump is shipped with the Libraries disabled and their templates empty. Each library must be enabled individually before you can use the presets from a library template.

The steps for enabling the Libraries are given below:

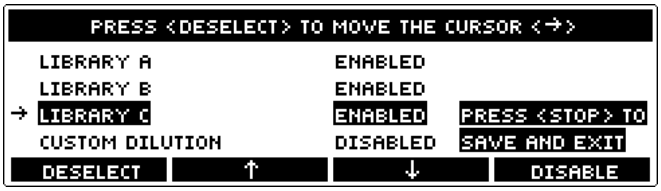
1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Find the SELECT DELIVERY MODE feature, and press its **number** to call it.



3. You now see the ENABLE / DISABLE / MOVE screen, listing the delivery modes and features. To the right of each item in this list is either the word "Enabled" or "Disabled".



4. Use the "↑" or "↓" buttons to find the libraries A, B, and C. Each must be "Enabled" before you can use them.
5. Place the marker "➔" on the library to be enabled.
6. Press **Select** button to choose the library to enable and put the *highlight* on it.
7. Press "**Enable**".



8. Press **Deselect** to remove the highlight from the library.
9. Repeat steps 6-8 to enable the other libraries.
10. Press **Stop** to save your changes and exit to the MODIFY SETTINGS screen. Or press the **Back** key to exit without saving.

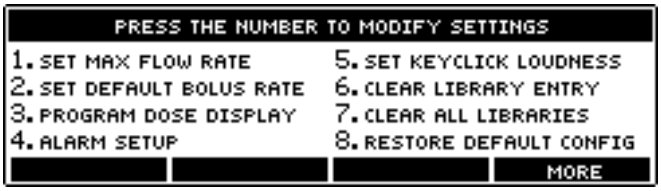
11.7. Clear Library Entry (or Template)

The CLEAR LIBRARY ENTRY (or template) option is a *housekeeping* feature available through CUSTOM PROGRAM. Whenever a library template is no longer desired, it is a good idea to delete or *clear* it.

☞ Clearing a template *deletes* or removes all its settings from storage in pump memory. This prevents its unintentional or unauthorized use for other patients.

The steps for clearing a template are given below:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. PROGRAM DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

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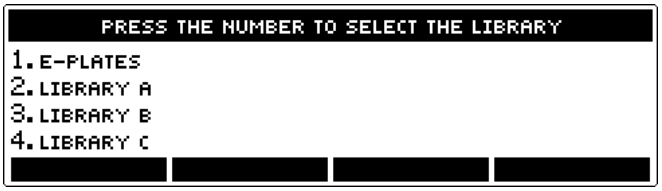
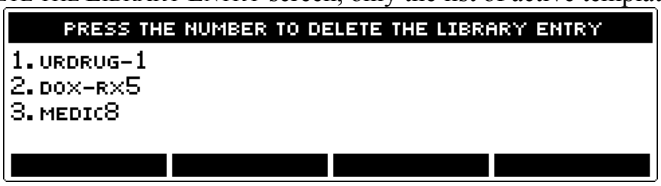
2. Press its number button to select CLEAR LIBRARY ENTRY.
3. At the SELECT THE LIBRARY screen, press the number button for the library containing the template you wish to delete.



4. At the DELETE THE LIBRARY ENTRY screen, only the list of active templates for the library appear.



No "Undelete" is Available	Be careful here. When you press the number button for deleting the template, there is no verify with "YES" or "NO". The template simply deletes as soon as you press its number. You do not have any option for undeleting. Once the template is deleted, it is gone.

5. Press the number button for the template you wish to delete. This erases the library template as soon as you press the button.
6. When finished deleting or clearing a library templates, press the Back button to exit.

11.8. Clear All Libraries

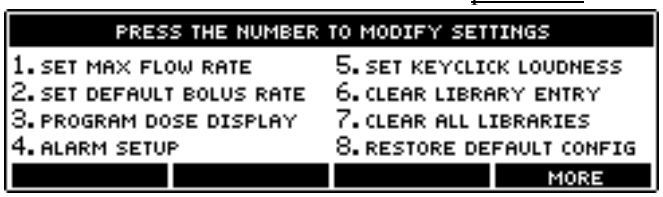
The CLEAR ALL LIBRARIES feature is a *housekeeping* option available through CUSTOM CONFIGURATION. The settings of any given library are usually intended for use by a specific unit, department, organization, or hospital. Whenever your entire library contents are no longer desired, it is a good idea to delete or *clear* it.

☞ Clearing ALL libraries *deletes* or removes ALL templates settings stored inside ALL libraries.

Warning! Clear All Libraries is Permanent	Never clear ALL libraries unless you want ALL their presets removed permanently from the pump. When you clear all libraries, you are permanently erasing them from the pump's memory.

The steps for deleting all the libraries are given below:

1. Open CUSTOM PROGRAM, and go to the MODIFY SETTINGS screen.
2. Press its number button to select CLEAR ALL LIBRARIES. Remember: you are about to clear the contents of ALL templates inside ALL libraries and the deletion is permanent.


PRESS THE NUMBER TO MODIFY SETTINGS
1. SET MAX FLOW RATE
2. SET DEFAULT BOLUS RATE
3. PROGRAM DOSE DISPLAY
4. ALARM SETUP
5. SET KEYCLICK LOUDNESS
6. CLEAR LIBRARY ENTRY
7. CLEAR ALL LIBRARIES
8. RESTORE DEFAULT CONFIG
MORE

3. At the CLEAR ALL LIBRARIES screen, press the **Yes** button to erase the contents of all libraries. Press the **No** button or **Back** button to exit without deleting the libraries. In either case, you return to the MODIFY SETTINGS screen.

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12. CONFIGURATION CLONING

This chapter defines what Medex calls *Configuration Cloning* and describes how you can use it to transfer configuration settings from one pump to another.

12.1. What is Configuration Cloning?

Configuration Cloning is nothing more than the ability to make configurations changes for one *Medfusion 3500* infusion pump, and then transfer those settings entirely to another *Medfusion 3500*.

This cloning transfers the complete settings of the teaching pump, including all libraries and templates. The pump that learns, thereafter functions identically with the teaching pump.

This is especially useful when you have many groups of pumps that must be customized for various units and departments within your organization or hospital.

All you have to do is configure one pump from each unit or department, and then clone its settings to all the other pumps of those respective units or departments.

12.2. Teaching and Learning

Configuration cloning involves a teaching and learning process. One pump is configured through Custom Program to function according to the needs of a specific unit, department, organization, or hospital. This pump is the Teacher. Any other *Medfusion 3500* can be taught the custom settings and/or libraries by this pump.

12.3. Preparing for Configuration Cloning

For the teaching process of Configuration Cloning, you can use any *Medfusion 3500* pump that has the settings you wish to transfer as long as both pumps are of the same software version. This can be one you customize especially for the cloning. Or one that already has the desired settings. You can either take the teaching pump to the learning pumps. Or bring all the learning pumps to the teaching pump. Configuration Cloning can be performed anywhere.

12.4. Using The Teach Mode

The Teach Mode is the feature used to transfer configuration settings from one Medfusion 3500 infusion pump to another.

New Overwrites Old	The *Medfusion 3500* infusion pump can hold only one set of custom configuration settings at a time. When you *teach* the configuration from one pump to another, the *incoming* configuration settings from the *teaching* pump completely overwrite the settings in the *learning* pump.

The steps for using the Teach Mode are given below:

Teacher Pump:

1. Open custom configuration, and go to the MODIFY SETTINGS screen.
2. At the MODIFY SETTINGS screen, press the **More** button until you find the TEACH MODE feature.
3. Use the **number** buttons to select TEACH MODE. The pump is now ready to clone its settings to the *learning* infusion pump until you press the **Exit** button.

Learning Pump:

1. Open custom configuration, and go to the MODIFY SETTINGS screen.
2. At the MODIFY SETTINGS screen, press the **More** button until you find the LEARN MODE feature.
3. Place the pumps back to back, with the *infrared outlets* aligned facing each other. (Or use the Medex Cloning Block.)
4. Use the **number** buttons to select LEARN MODE. And setup the pump for the configurations you wish it to learn. The pump is now ready to receive configuration settings from the *Teaching* infusion pump.
5. Simple configuration transfer takes approximately 2 seconds. A total configuration transfer, including libraries, takes approximately **1 minute** per pump. Then turn off the *learning* pump.
6. Repeat this process for each learning pump.

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12.5. Using The Learn Mode

The *Learn Mode* is the feature used to receive configuration settings from one ***Medfusion 3500*** infusion pump to another.

New Overwrites Old	The *Medfusion 3500* infusion pump can hold only one set of custom configuration settings at a time. When you *teach* the configuration from one pump to another, the *incoming* configuration settings from the *teaching* pump completely overwrite the settings in the *learning* pump.

For the learning process of Configuration Cloning, you can use any Medfusion 3500 that has the exact settings you wish to transfer to other pumps. This can be one you customize especially for the cloning. Or one that already has the desired settings. You can either take the teaching pump to the learning pumps or bring all the learning pumps to the teaching pump. Configuration Cloning can be performed anywhere.

The steps for using the *Learn Mode* are given below:

1. Setup the "teaching" pump using the above directions, and activate its *Teach* mode.
2. Place the pumps back to back, with the *infrared outlets* aligned facing each other. (Or use the Medex Cloning Block.)
3. Then setup each "learning" pump, one-by-one, by activating its *Learn* mode.
4. At the MODIFY SETTINGS screen, press the **More** button until you find the Learn Mode feature.
5. Use the number buttons to select Learn Mode. You now have 3 options:
   a) ***Learn Everything*** – the pump receives ALL custom configuration settings, including Standard and E-Plates Libraries. This takes approximately 1 minute, depending on the size of the libraries.
   b) ***Learn Config Only*** – The pump receives ONLY the custom configuration settings. This takes approximately 2 seconds.
   c) ***Learn Libraries Only*** – The pump receives only the library settings. This takes approximately 1 minute.
6. Use the number buttons to make your choice. Then either
   a) Press the Yes button to verify your choice.
   b) Press the No button to cancel and return to the previous screen.
   c) Press the Back button to cancel and return to the previous screen.
   d) The pump is now ready to receive settings from the teaching pump.
7. Simple current configuration transfer takes less than 10 seconds. A total configuration transfer, including libraries, takes approximately 1 minute per pump.
8. When complete, turn off the learning pump.
9. Repeat this process for each learning pump.

12.6. Troubleshooting the "Learn Error – Remote Not in Teach Mode" Error Message

If you start a learning session and there is no pump setup, ready, and aligned for *teaching* its configuration, the *learning* pump displays the following message:

"**LEARN ERROR – REMOTE NOT IN TEACH MODE**"

You can clear this message by pressing the Exit button and then setup a pump for teaching its configuration settings.

But if you do have a pump setup for teaching (using the steps given in this chapter) it may mean you have a problem with either of the pumps. This may be one of the following:

Type of Problem	Remedy
Alignment	The two pumps may not be back-to-back. Make them so.
Alignment	You may not have properly aligned the infrared data transfer ports. Try readjusting their alignment. If you have the optional Medex Cloning Block, try using it here.
Incorrect Teaching Setup	The *teaching* pump may be incorrectly setup. Cancel its teaching setup and try again.
Incorrect Learning Setup	The *learning* pump may be incorrectly setup. Cancel its learning setup and try again.
Damaged Pump	One or the other of the pumps may be damaged or malfunctioning. You can determine which if you: • Select and setup another pump for *Learning* and try again. If this succeeds, the first learning pump is malfunctioning. Have it inspected by a trained biomedical technician. • Select and setup another pump for *Teaching* and try again. If this succeeds, the first teaching pump is malfunctioning. Have it inspected by a biomedical technician.

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